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ABSTRACT

A graduate follow-up survey evaluated student outcomes for the radiography program at Middlesex Community College/Middlesex Memorial Hospital (Connecticut). The program prepares students for entry-level employment as radiographers. The questionnaire, based on input from program officials and respondents, was mailed to 14 1988 and 1989 graduates. Based on a 100 percent response, the results indicated overall student satisfaction with the curriculum, employment, and registry examination results. Graduates suggested some changes: more efficient use of positioning laboratory time; increased trauma rotation; and a stronger relationship between technologists and students. Graduates of the program are achieving program objectives and are satisfied with the educational process. It is recommended that the study be done on a continual basis to substantiate the results. Accreditation requirements should then be satisfied as part of the program's on-going system of self-evaluation. (Twelve tables, 13 references, and 3 appendices are included: (1) survey questionnaire; (2) questionnaire cover letter; and (3) radiologic technology program goals and objectives.) (NLA)

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FOLLOW-UP SURVEY OF THE 1988 - 1989
RADIOGRAPHY GRADUATES OF MIDDLESEX
COMMUNITY COLLEGE

Governance and Management

by

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A Practicum Report presented to Nova University in
partial fulfillment of the requirements for the
degree of Doctor of Education

Nova University

October, 1990

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Based on a one hundred percent response, the results indicated overall student satisfaction with the curriculum, employment, and registry examination results. Graduates suggested some changes such as, more efficient use of positioning laboratory time, increase trauma rotation and to strengthen the relationship between technologists and students.

Graduates of the radiography program are achieving the objectives of the program and are satisfied with the educational process. It is recommended that this study should be done on a continual basis to further substantiate the results. This mechanism should satisfy accreditation requirements as a part of the program's on-going system of self-evaluation.

Abstract of a Practicum Report Presented to Nova University
in Partial Fulfillment for the Requirements for the
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The purpose of this study was to evaluate student outcomes by conducting a graduate follow-up survey for the radiography program at Middlesex Community College/Middlesex Memorial Hospital. The radiography program is designed to prepare students for entry level employment as radiographers. To ascertain if the radiography program is meeting the needs of the students and college a graduate follow-up study was conducted.

A questionnaire was developed, based on input from the radiography program officials and potential respondents. The face validity of the questionnaire was achieved by allowing three educators to rate items on the questionnaire. The reliability was achieved by the test-retest method. The questionnaire was mailed to the fourteen 1988 and 1989 graduates.

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Chapter 1

INTRODUCTION

Middlesex Community College is one of the twelve public two-year colleges of the Connecticut Regional Community College system. It is the objective of Middlesex Community College to provide a full range of courses which enable students to formulate occupational, philosophical, and recreation goals, to provide the best resources and facilities for the college, and to ascertain and meet the curricular and vocational needs of students. One of the programs offered at Middlesex Community College is the Radiologic Technology program. This program is designed to prepare students for entry level employment as radiographer in hospitals and medical offices. It is offered jointly with the Middlesex Memorial Hospital, located in Middletown Connecticut. To ascertain if the radiography program is meeting the needs of the students and college a graduate follow-up study was conducted.

Providing a well rounded health career program demands continuous evaluation to determine how the system or process can be improved. The purpose of this study was to evaluate student outcomes by conducting a graduate follow-up survey for the radiography program at Middlesex Community

College/Middlesex Memorial Hospital. The follow-up study received input from graduates regarding the programs continuing development and effectiveness. The graduate follow-up survey identified program weaknesses that need improving and strengths upon which to build.

A questionnaire was developed to gather data relating to graduate experiences (Appendix A). The questionnaire was designed to easily tabulate and utilize information. The questionnaire provided information relative to graduate employment status, career educational preparation, evidence of continuing education and program evaluation. This graduate follow-up survey will become part of the process for periodic self-evaluation of the radiography's program effectiveness and will satisfy continuing accreditation requirements from the Committee on Allied Health Education and Accreditation (CAHEA). The data obtained from the graduates secured sufficient qualitative information to demonstrate an ongoing system of evaluation of outputs consistent with the goals of the program and Middlesex Community College. In discussing evaluation, Isaac (1990) states that evaluation typically is associated with how effective or ineffective, how adequate or inadequate, how good or bad, how valuable or invaluable, and how appropriate a given action, process, or product is in terms of the perceptions of the individual who makes use of information provided by an evaluator.

The seminar on Governance and Management, to which this study is connected, points out that educational organizations have increasingly felt greater accountability from various constituencies. A more sophisticated student body demands more effective performance by faculty and administrators. One of the key means of determining effectiveness and student satisfaction is a graduate follow-up study. Administrators and educators during the decision-making process of governance must utilize this information to establish policies and procedures concerning the institution's mission, goals and objectives. The National Center for Higher Education Management Systems (WCHEMS Newsletter, no 87, June 1984:67), listed student educational satisfaction as one of the nine critical dimensions of effectiveness.

Chapter 2

REVIEW OF THE LITERATURE

Educational accountability has made evaluation of student learning in allied health education one of the most important facets of the systems approach to instruction. Evaluation is a form of quality control. Evaluation involves the measurement of how effectively the learners are meeting the objectives as a result of instruction. Evaluation is a cooperative venture involving students, instructors, supervisors and administrators who are concerned about teaching and learning.

Gagne and Briggs (1988) states that evaluation methods may be applied to lessons or courses, and also to entire programs of instruction. The drive to hold schools accountable for student progress picked up momentum in the late 1960s. The pressure on school administrators to be accountable for the management of their instructors has continued. Knirk and Gustafson (1986) identified two methods of evaluation, formative and summative. Formative evaluation looks at the process of learning and teaching while the instructional design is being developed and the materials produced. Summative evaluation is performed near

the conclusion of the teaching/learning process to draw inferences of the instruction.

In review of the literature many institutions have used a graduate follow-up survey as a means to evaluate both individual materials and complete instructional programs. The 1987 annual survey of program directors on students and employment characteristic by the American Medical Association Division of Allied Health Education and Accreditation (DAHEA) indicates that ninety-three percent of program directors remain in touch with a large percentage of their recent graduates.

Several graduate follow-up studies were done as a means of measuring program effectiveness, based on the success of its graduates. Midgen (1988), Holt and Flaherty (1989), Head (1988) confirmed in their studies that graduate follow-up studies provided important information for higher education institutions. Careful planning, early involvement of users of the information, and multiple data presentation strategies are some of keys to success for such studies.

The follow-up surveys found in the literature concentrated primarily on the institution, rather than on individual programs. No studies were found on radiography graduates. In a survey conducted by Ziv and Ehrenfeld (1990), questions were sent out to the first seven graduate classes of Hadassah Nursing School. They found that few nurses continued their studies, twenty-two percent completed

various post basic nursing courses, twelve percent were studying for master's degrees, and only one nurse had received a master's degree in nursing. The Center for Vocational Education did a follow-up study of the 1988 graduates of post secondary vocational programs in Montana. They came to the conclusion that such studies provided data necessary for program planning and review, equipment purchasing, and program articulation.

Studies over the years have strongly supported graduate follow-up as a means of program effectiveness, based on the success of its graduates. Recently Judith Baker (1989) states that the direct cost of providing medical services will depend on the quality of the medical labor force. It was pointed out that medical services will be strained with a labor shortage which is projected to increase at an alarming rate and that obtaining and retaining competent staff in the field of radiology will have impact on the cost of services. Stiewing (1989) supported this trend and pointed out that educators must be accountable for providing appropriate education. Students who are less than successful do not always accept ownership of their failure. As a result, there has been a number of cases in which students have claimed educational impoverishment due to teacher or program incompetence, most notable are Peter vs San Francisco Unified School District (1976), and Hoffman vs Board of Education City of New York (1978).

In discussing appraising institutional performance Miller(1979) outlined seven elements often involved in institutional evaluation. These elements are student outcomes, administrative leadership, constituent perceptions, major community impact, fiscal indicators, state wide boards, and federal agencies. This study will concentrate on one of Miller's elements, students outcomes, by conducting a graduate follow-up survey for the radiography program at Middlesex Community College/Middlesex Memorial Hospital, located in Middletown, Connecticut.

Chapter 3

METHODOLOGY AND PROCEDURES

The primary purpose of the study was to receive input from graduates regarding the radiography programs continuing development and effectiveness. A questionnaire was developed to gather data relating to graduate experiences. The questionnaire (Appendix A), was designed to easily tabulate and utilize information. The questionnaire provided information relative to graduate employment status, career educational preparation, evidence of continuing education, and program evaluation. In designing the questionnaire the program director interviewed the radiography program officials and potential respondents and explored what is meaningful or important to them.

The face validity of the questionnaire was achieved by allowing three educators to rate items on the questionnaire.

A scale from one to five was used, with five being the acceptable end of the scale. Items having a rating of three and higher were used in the questionnaire. The reliability of the questionnaire was achieved by the test-retest method. Appropriate modifications were made to the questionnaire to eliminate ambiguous and biased items.

The graduate follow-up questionnaire was mailed to the fourteen 1988 to 1989 graduates. Along with the

questionnaire there was a cover letter (Appendix B), stating instructions on completing the questionnaire and a stamped return envelope. Special effort such as telephone calls, were made to obtain all fourteen responses. The data obtained was tabulated in numerical and percentage forms.

Limitations. The limitation that effects this study was the small number of students who graduate from the radiography program per year. Generalizations made from the results are limited to graduates of Middlesex Community College.

Assumption. It was assumed that the graduates responded to the questionnaire honestly.

Chapter 4

RESULTS

The follow-up survey questionnaire was completed by all the graduates from 1988-1989, resulting in a one hundred percent response. Eight students graduated in 1988 and six in students in 1989. Table 1 shows the present employment location of the graduates. All the graduates within this period are employed in Connecticut, five remained in the city they received their training and nine relocated or returned to their home town.

Table 1
Present Employment Location
of Radiography Graduates

	Middletown Connecticut	Inside Connecticut	Outside Connecticut
No. of Grads.	5	9	0

In order to identify the employment patterns, the graduates were asked to indicate the type of facility in which they were employed. Table 2 shows that one hundred percent of the graduates were employed and that two

graduates had additional part-time positions in radiography. One graduate was employed part-time, the other thirteen were employed full-time in radiography. Sixty-four percent of the graduates were employed in a two hundred and fifty to five hundred bed hospital, fourteen percent in a five hundred bed hospital and the others were employed in smaller institutions, such as clinic and doctor's offices.

Table 2

Type of Facility in which Radiography
Graduates are Employed

Category	Number	Percentage	Part Time	Full Time
less than 50 beds	0	0	0	0
50-250 bed hospital	1	7	0	1
250-500 bed hospital	7	64	3	6
Over 500 bed hospital	2	14	0	2
Doctor's office	3	21	0	3
Clinic	1	7	0	1
Education	0	0	0	0
Industry	0	0	0	0

Table 3 shows the response to the question on positions held since graduation. All the graduates started out as staff radiographer but, within a short period, thirty-five

percent obtained promotions into positions such as special procedures technologist, chief technologists and in-charge technologists. Graduates also indicated that they performed in specialization areas at some point after graduating. Areas such as computerize tomography (CT), instruction and magnetic resonance imaging (MRI).

Table 3
Titles of Positions Radiographs Graduates
Held Since Graduation

Category	Number	Percentage
Staff Technologists	14	100
Chief Technologists	1	7
Incharge Technologists	2	14
Special Procedures Tech.	2	14

Table 4 shows the response to the area of continuing education. Seventy-nine percent of the graduates obtained continuing education through their workplace in the form of inservice programs. Although twenty-nine percent were enrolled in college, no one has completed a four year degree. Fifty percent of the graduates obtained continuing education through their professional society. Table 4 also

shows that graduates obtained continuing education through more than one means.

Table 4
Evidence of Continuing Education
of Radiography Graduates

Category	Total	Percentage
Hospital Inservice	11	79
Professional Society	7	50
Enrollment in College	4	29
No Activity	2	14
Completed Four Year Degree	0	0

Another area of the survey was educational preparation. Graduates rated how well prepared they were to fulfill job responsibilities. Table 5 and Table 6 shows that one hundred percent of the graduates rated theory preparation as excellent and ninety-three percent rated their practical or clinical preparation as excellent. Graduates were asked to list the major areas of their job responsibilities they felt least qualified to assume because of deficiency in the training program.

Table 5
Rating of "Theory" Preparation
for Radiography Graduate's
Job Performance

Ratings	No. Response	Percentage
Excellent	14	100
Good	0	0
Average	0	0
Below Average	0	0
Poor	0	0
Totals	14	100

Table 6
Rating of "Practical" Preparation
for Radiography Graduate's
Job Performance

Rating	No. Response	Percentage
Excellent	13	93
Good	1	7
Average	0	0
Below Average	0	0
Poor	0	0
Totals	14	100

Table 7 shows that sixty-four percent of the graduates indicated that they had no problems performing their job requirements. Twenty-one percent indicated some difficulty in the area of trauma radiography, and seven percent indicated difficulty in the areas of quality assurance and bronchography.

Table 7

Job Responsibilities Least Qualified to
Assume Due to Deficiency In
Radiography Training

Responsibilities	No. Response	Percentage
Exposures Factors	0	0
Patient Care	0	0
Equipment Handling	0	0
Quality Assurance	1	7
Bronchography	1	7
Positioning (trauma)	3	21
None	9	64

Table 8 shows a break down of the responses to the question, What major areas of responsibilities each graduate felt most or best qualified to assume? Fifty percent of the graduates indicated that they were able to perform all job responsibilities. Others were more specific by identifying

areas such as professionalism (43%), operating room procedures (7%), mammography (7%), and fluoroscopy (7%). All the graduates indicated that they had no difficulty adapting to their jobs. Fifty-seven percent indicated that they have had job promotions since graduating, the forty-three percent of the graduates who did not receive a promotion felt it was not due to a deficiency in training. An average of eighty hours were required for orientation to new positions.

Table 8

Job Responsibilities Best Qualified to
Assume Due to Radiography Training

Responsibilities	No. Response	Percentage
Positioning	12	86
Exposures Factors	8	57
Patient Care	7	50
All Responsibilities	7	50
Professionalism	6	43
Operating Room Procedures	1	7
Mammography	1	7
Fluoroscopy	1	7
Equipment Handling	0	0

The final section of the follow-up survey asked graduates to evaluate the radiography program based on the national registry examination and overall quality of the radiography program. One hundred percent of the graduates took and passed the American Registry Examination of Radiologic Technologists (ARRT). Table 9 shows that ninety-three percent of the graduates rated their preparation for the national registry as excellent. One graduate (7%) rated the preparation for the national registry as good.

Table 9
Preparation for the Radiography
Registry (ARRT) Examination

Rating	No. Response	Percentage
Excellent	13	93
Good	1	7
Average	0	0
Poor	0	0
Totals	14	100

Table 10 shows a further breakdown of the American Registry of Radiologic Technologists examination. One hundred percent of the graduates felt that they were well prepared to answer questions on radiation protection, radiographic procedures, and patient care and management.

Ninety-three percent felt that they were well prepared for the image production and evaluation questions, and seventy-nine percent felt prepared for the questions on equipment operation and maintenance.

Table 10

Areas of the Registry Examination that
Radiography Graduates were
Well Prepared to Meet

Areas	No. Response	Percentage
Radiation Protection	15	100
Radiographic Procedures	14	100
Patient Care and Management	14	100
Image Production	13	93
Equipment Operation	11	79

In response to identifying the areas of the registry that graduates were least prepared to meet, Table 11 shows that thirty-six percent had difficulty with the equipment operation and maintenance section and seven percent had difficulty with the image production and evaluation section of the national registry examination.

Table 11
Areas of the Registry Examination that
Radiography Graduates were
Least Prepared to Meet

Areas	No. Response	Percentage
Equipment Operation	5	36
Image Production	1	7
Radiographic Procedures	0	100
Patient Care and Management	0	100
Radiation Protection	0	100

Throughout the radiography program a variety of teaching strategies are utilized. Table 12 shows the ranking by graduates of the most effective teaching strategy. Teaching strategies were ranked on a scale from one to four, one being the most effective. Sixty-four percent of the graduates ranked lecturing as the most effective followed by positioning laboratory. Individual projects were ranked as the least effective.

Table 12
Ranking of Effective Teaching Methods
in the Radiography Program

Teaching Methods	1*	Ranking Scale		
		2	3	4
Lecture	64%	21%	7%	7%

Table 12 (Cont.)

Ranking of Effective Teaching Methods
in the Radiography Program

Teaching Methods	1*	Ranking Scale		
		2	3	4
Positioning Lab.	29%	14%	43%	14%
Individual Projects	7%	14%	7%	71%
Film Critique	0%	50%	43%	7%

*1 being the most effective.

In an overall evaluation of the educational program, the following were listed as strong areas of the program:

1. Clinical training
2. Instructor's assistance is readily available outside the classroom
3. Excellent scholastic preparation
4. Well organized program
5. Clinical lab. time
6. Prepares future technologists for future endeavors
7. Clinical supervision
8. Lecture content and presentation
9. Small radiology classes, which provided personalized instruction
10. Program faculty
11. Sequence of courses and clinical rotation
12. One-on-one film critique

The following were listed as weak areas:

1. More organized clinical positioning laboratory time
2. Students should be allowed more independent clinical time
3. Technologists/student relationship
4. Positioning of trauma patients
5. Trauma rotation

The graduates listed suggestions for changes that would improve the program and better prepare future graduates.

The suggestions were as follows:

1. Increase clinical rotation through the emergence room
2. Increase trauma rotation
3. Develop a rotation to another clinical site to obtain more trauma experience
4. More emphasis should be placed on trauma and operating room procedures
5. Some emphasis should be placed on the relationship between technologists and students
6. Increase clinical time in the first year of the program
7. More individual projects to motivate students thinking
8. More efficient use of positioning laboratory time

The final question on the graduate follow-up study asked the graduates if they would recommend the radiography program at Middlesex Community College/Middlesex Memorial Hospital to other applicants wishing to enter the profession. The responses indicated that all the graduates would make that recommendation.

Chapter 5

DISCUSSION, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

Discussion

The results of the follow-up study for the radiography program at Middlesex Community College/Middlesex Memorial Hospital revealed that one hundred percent of the 1988-1989 graduates of the radiography program obtained jobs in the field of radiology. Graduates were able to find employment close to home. Graduates were able to go back to their communities and be productive. This fulfills one of the objectives of Middlesex Community College which is to provide training and education in vocational and topical areas of a personal and community nature. Most graduates sought and obtained employment in a hospital environment (85%). Even though two graduates were employed full-time in a non-hospital environment, they held part-time jobs in a hospital. Within a short period graduates received job promotions(35%) which revealed satisfactory job performance and also the satisfaction of employers. The graduates who were not promoted since graduation pointed out that a lack of promotion was not due to a deficiency in training.

In the area of continuing education, the results were similar to the follow-up study of Hadassah Nursing School graduates (Ziv, 1990), in that a small percentage of the graduate continued their education by obtaining additional college degrees. The results revealed that most graduates obtained continuing education through hospital inservice programs. Inservice programs are often required by radiology departments in a hospital environment.

The results show that graduates were satisfied with the preparation obtained from the radiography program for their on the job performance. In the areas of theory and practical preparation, the results revealed a one hundred percent satisfaction for theory preparation and a ninety-three percent satisfaction for practical preparation. This result can be related to Baker's (1989) concern that obtaining and retaining competent staff in the field of radiology will have an impact on the cost of medical services, because of the cost involved in retraining or replacing staff.

Most graduates (64%) revealed that there was no difficulty performing job requirements. Thirty-five percent identified certain areas, such as trauma radiography, operating room procedures, that posed some difficulty. The results revealed that the major sources of graduate satisfaction with the radiography program were achievement on the American Registry of Radiologic Technology

examination, teaching strategies, clinical training, organization of the program, program faculty, curriculum and job satisfaction. The major sources of dissatisfaction were clinical laboratory, trauma rotation, operating room procedures and technologist/student relationship.

The results were interrelated with other follow-up studies such as Midgen (1988), and Head (1988), in that the feedback from graduates provided a means of systematic review of program planning and program articulation.

Conclusion

In an effort to do the follow-up survey of the 1988 -1989 radiography graduates of Middlesex Community College/Middlesex Memorial Hospital, this study received input from graduates regarding the outcomes of the programs continuing development and effectiveness. All schools or institutional programs are interested in improving curriculum, faculty, instructional strategies and the satisfaction and success of its graduates. Based on the finding, the learners or graduates of the radiography program are meeting the objectives of the program and are satisfied with the educational process. The major areas of graduate satisfaction were that graduates are readily employable, their results on the American Registry of Radiologic Technology examination, the curriculum and being

able to perform well on the job. Graduates pointed out that there is a need to improve clinical laboratory time, increase trauma rotation, increase operating room procedures and strengthen the course on Equipment Safety and Maintenance.

Very few graduates (29%) are working on a four year degree. Additional education is being achieved primarily through hospital inservice programs. Graduates are willing to recommend the Middlesex Community College/Middlesex Memorial Hospital radiography program to individuals seeking a career in radiography.

Implications

The implications of this graduate follow-up study for the radiography are as follows:

1. The overall college objective of providing the best resources and facilities for the college, and to ascertain and meet the curricular and vocational needs of the student is being achieved.

2. The specific goals and objectives of the radiography program (Appendix B) are being satisfactory attained.

3. Conducting a graduate follow-up study is a means of meeting the mandate for periodic self-evaluation of the programs effectiveness. The results of such a study appropriately reflect program organization and policies.

4. The increase in applicants to the radiography program at Middlesex Community College is partly due to the satisfaction of its graduates.

5. Graduates are remaining in the field of radiology, primarily at the staff technologist level.

6. The curriculum adequately prepared students for jobs and the American Registry of Radiologic Technology examination.

7. Graduate job performance can be improved in the areas of trauma positioning, operating room procedures, and quality assurance.

8. Student preparation can be improved in the areas of clinical education, equipment operation and maintenance and in image production and evaluation.

Recommendations

On the basis of this study, future research should be done on a continual basis to further substantiate the results. This mechanism should satisfy accreditation requirements as a part of the program's on-going system of self-evaluation. An employer follow-up study should also be a part of future graduate follow-up studies to evaluate feedback from employers on graduate performance.

Student preparation should be improved by effective use of clinical laboratory time, such as the use of simulation of trauma positioning and operating room procedures.

Program officials should also make an effort to increase the clinical rotations through the identified weak clinical areas.

Although the level of graduate satisfaction was high, some graduates suggested several improvements to the program. Examples of the suggested improvements were increase trauma rotation, strengthen the relationship between students and staff technologists, increase the clinical rotation through the operating room and more efficient use of positioning laboratory time. It is recommended that these suggestions should be evaluated by program officials. On-going appraisal is necessary to evaluate the changes suggested by the graduates. It is also recommended that instructors use the data from this study to update and modify existing curricula.

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APPENDIX A
SURVEY QUESTIONNAIRE

MIDDLESEX COMMUNITY COLLEGE/MIDDLESEX MEMORIAL HOSPITAL
SCHOOL OF RADIOGRAPHY
MIDDLETOWN, CT.

PROGRAM EVALUATION

We need your suggestions and comments, as a graduate, to
justify changes to improve our program.

A. Graduate

1. Date this questionnaire was completed _____
2. The year your completed the program _____

B. Employment status

1. Present employment location:
 - a. _____ Middletown, Ct.
 - b. _____ In Connecticut but not in Middletown, Ct.
 - c. _____ Outside Connecticut
 - d. _____ Other
2. Type of facility in which employed:
 - a. _____ Less than 50 bed hospital
 - b. _____ 50-250 bed hospital
 - c. _____ 250-500 bed hospital
 - d. _____ Over 500 bed hospital
 - e. _____ Doctor's office
 - f. _____ Clinic
 - g. _____ Education institution
 - h. _____ Industry
 - i. _____ Other
3. Job classification:
 - a. _____ Full-time
 - b. _____ Part-time
4. List the titles of the positions you have held since graduation from Middlesex beginning with your current position:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____

5. Check the area or areas of specialization in which you now work or have worked:

- | | |
|--|--|
| a. ☐ Diagnostic radiography | b. ☐ Special procedures |
| c. ☐ CAT | d. ☐ Ultrasound |
| e. ☐ Nuclear medicine | f. ☐ Nuclear medicine |
| g. ☐ Administrator | h. ☐ Chief technologist |
| i. ☐ Supervisor | j. ☐ Industry |
| k. ☐ Clinical instructor | l. ☐ Program director |

C. Continuing Education

1. Continuing education is presently gained through (check all that apply):

- | | |
|-----------------------------|-----------------------------------|
| a. ☐ | Enrollment in college course |
| b. ☐ | Hospital inservice education |
| c. ☐ | Professional society |
| d. ☐ | Have completed a four year degree |
| e. ☐ | Other means |
| f. ☐ | No activity at this time |

D. Educational Preparation

1. How would you rate your preparation at Middlesex for your job position or positions?

Theory

- | | |
|-----------------------------|---------------|
| a. ☐ | Excellent |
| b. ☐ | Good |
| c. ☐ | Average |
| d. ☐ | Below average |
| e. ☐ | Poor |

Practical

- | | |
|-----------------------------|---------------|
| a. ☐ | Excellent |
| b. ☐ | Good |
| c. ☐ | Average |
| d. ☐ | Below average |
| e. ☐ | Poor |

2. What were the major areas of responsibilities of your job that you felt least qualified to assume because of a deficiency in your training? _____

3. What were the major areas of responsibilities of your job that you felt most or best qualified to assume because of your training? _____

4. Did you have difficulty adapting to your job?

a. _____ Yes b. _____ No

If yes, please explain the difficulty.

5. Have you had promotions in your career since graduating?

a. _____ Yes b. _____ No

If no, do you feel it was because of a deficiency in your training? _____ Please explain.

6. Please estimate the approximate time required for orientation or on the job training required in your first position (give approximate number of hours).

_____ Hours

E. Program Evaluation

1. Have you taken the American Registry of Radiologic Technologists?

_____ Yes _____ No

a. If yes, when? _____

b. Did you pass? _____ Yes _____ No

2. How would you rate your preparation for the Registry (A.R.R.T.) Examination?
- a. _____ Excellent
 - b. _____ Good
 - c. _____ Average
 - d. _____ Below average
 - e. _____ Poor
3. Areas of the examination you were well prepared to meet:
- a. _____ Radiation Protection
 - b. _____ Equipment Operation and Maintenance
 - c. _____ Image Production and Evaluation
 - d. _____ Radiographic Procedures
 - e. _____ Patient Care and Management
4. Area(s) of the examination you felt you were least prepared to meet:
- a. _____ Radiation Protection
 - b. _____ Equipment Operation and Maintenance
 - c. _____ Image Production and Evaluation
 - d. _____ Radiographic Procedures
 - e. _____ Patient Care and Management
5. Throughout the radiography program we utilized a variety of teaching methods. Please indicate, through ranking, which method you felt was most effective for learning purposes. (1 being the most effective)
- a. _____ Lectures
 - b. _____ Positioning Laboratory
 - c. _____ Film critique
 - d. _____ Individual Projects

Comments: _____

Evaluation of the program by the Graduate
Page 5.

6. Evaluate the overall educational program at Middlesex, indicating:

Strong area(s): _____

Weak area(s): _____

7. List suggestion for changes that would improve the training program or better prepare the student for the future:

Additions: _____

Deletions: _____

8. Would you recommend the Radiography program at Middlesex to other applicants wishing to enter the profession?

_____ Yes _____ No

If no, why not? _____

Thank you for your assistance in completing this
questionnaire.

APPENDIX B
QUESTIONNAIRE COVER LETTER



MIDDLESEX MEMORIAL HOSPITAL

28 CRESCENT STREET MIDDLETOWN, CONNECTICUT 06457 TELEPHONE 347-9471

June 6, 1990

Dear Ruth:

Greetings. The School of Radiography at Middlesex Community College/Middlesex Memorial Hospital is conducting an evaluation of our program. This evaluation is done periodically to make sure we are meeting the needs of our graduates and the profession. This evaluation is also done to prepare and submit a critique of our program to the national accreditation agency concerning the adequacy and relevance of our professional curriculum at Middlesex Community College.

We are soliciting your help. Please complete the enclosed questionnaire and include as many constructive suggestions as possible. Please return the completed questionnaire as soon as possible in the enclosed envelope. Then we will be able to compile and summarize your suggestions and make the necessary curriculum modifications.

We are looking forward to hearing from you. We hope that you will let us know how you are and what you are doing. If you do come through Middletown, stop by and see us.

Thanks for your anticipated cooperation.

Sincerely,

A handwritten signature in cursive script that reads 'Weymouth Spence'.

Weymouth Spence, M.S., R.T.(R)
Program Director
School of Radiography

APPENDIX C

RADIOLOGIC TECHNOLOGY PROGRAM
GOALS AND OBJECTIVES

GOALS AND OBJECTIVES

RADIOLOGIC TECHNOLOGY PROGRAM

Middlesex Community College
Middlesex Memorial Hospital

The goals and objectives of the Radiologic Technology Program, a joint effort conducted by Middlesex Community College and Middlesex Memorial Hospital include the following:

1. Applying knowledge of the principles of radiation protection for the patient, self and others.
2. Applying knowledge of anatomy, positioning and radiographic techniques to accurately demonstrate anatomical structures on a radiograph.
3. Determining exposure factors to achieve optimum radiographic technique with a minimum of radiation exposure to the patient.
4. Examining radiographs for the purpose of evaluating technique, positioning, and other pertinent technical qualities.
5. Exercising discretion and judgment in the performance of medical imaging procedures.
6. Providing patient care essential to radiologic procedures.
7. Recognizing emergency patient conditions and initiating life saving first aid.